NIGHTLINE, INC.
SECURITY AND TRAINING SUPPORT
NIGHT VISION SPECIALISTS

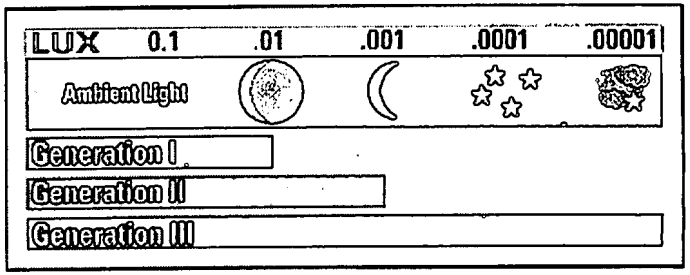
Night Vision

Goggles | Pocketscopes | Weapon Sights | Binoculars | CCTV

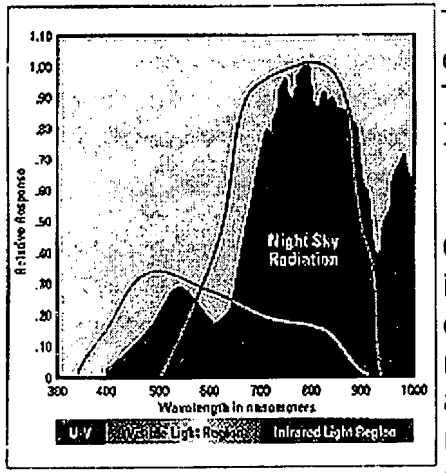
(Note: Night vision equipment is subject to export restrictions.)

Specializing in night vision (NV), we offer products from the leading manufacturer in the world, Litton Electro-Optical Systems. Litton has been producing night vision since 1972 and in 1995 acquired two other manufacturers, VARO and Intevac, thereby making Litton's product line the largest and most versatile in the market today. With state of the art production facilities in Tempe, Arizona and Garland, Texas, Litton can produce state-of-the-art designs which are second to none. Using their proven technology as an original tube manufacturer of Generation II, II^{Plus}, II H.D. and III devices, Litton continues to strive to perfect systems and increase the ratio of success in some of your toughest operations.

Night vision devices using image intensifier tube technology require some ambient light to operate. The level of moonlight, starlight or other ambient light necessary is a function of the technology employed. The night vision industry has evolved through three stages, or "Generations," of development. Generation I technology is obsolete in the US market. Litton concentrates its manufacturing capabilities on Generation II, II+, and III. Depicted on the right are minimum operating light levels for Generation I, II and III.

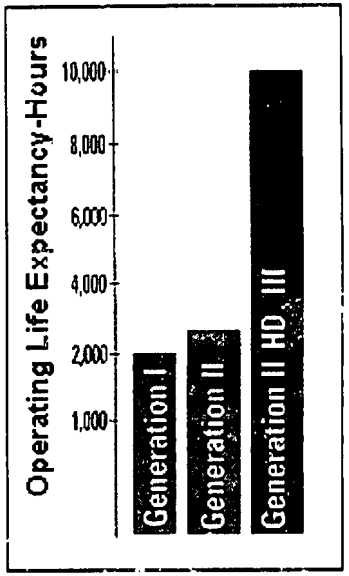


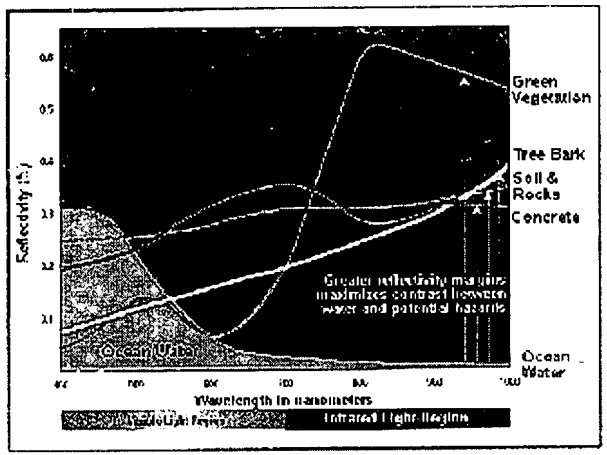
In November 1999, Litton introduced the new Generation IV Unfilmed image intensifier technology, which significantly enhances the operational envelope in the darkest flight regimes as well as in high ambient light urban environments. Litton's new image intensifier tubes equipped with an auto-gated^{TM} power supply allow helicopter and fixed wing pilots immediate and seamless transition while scanning across varied illumination backgrounds. More information in Generation IV technology will be discussed as the information becomes available.



The GEN III Gallium Arsenide (GaAs) photocathode is uniquely sensitive beyond 800 nanometers, considered to be the critical near-infrared region where night sky illuminance levels are greatest. This spectral response shift to the red region results in improved Signal-to-Noise Ratios over GEN III predecessors, delivering a three-fold improvement in visual acuity and detection distances.

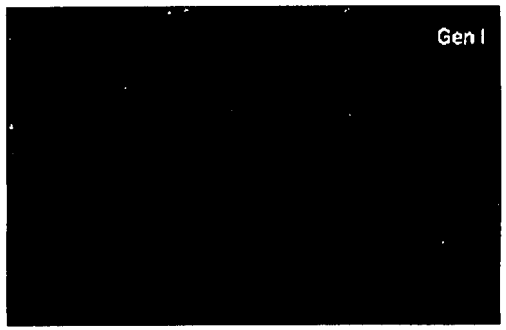
Continuing improvements to the operating life expectancy of the image intensifier tube has led to an increase from 2,000 hours for Generation I equipment to 10,000 hours for Generation II H.D. and Generation III making tube replenishment for the system virtually unnecessary. This is an important consideration when the intensifier tube normally represents more than 50% of the overall cost. Litton always uses new tubes so reliability is guaranteed.





Most natural backgrounds reflect infrared light more readily than visible light. When reflectance differences between discernable objects are maximized, viewing contrast increases, making potential terrain hazards and targets far more distinguishable. Gen III's high infrared response complements this phenomenon, creating a sharper, more informative image.

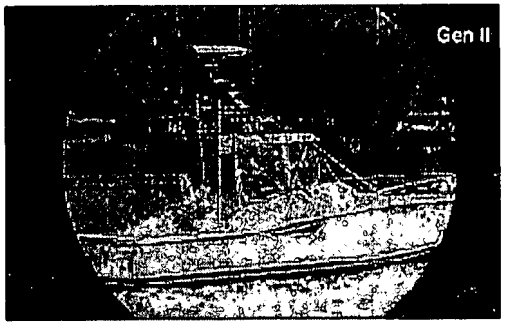
Generation	I
Era	1960's
Amplification	1,000x
Operating Life	2,000 hours



The early 1960's was witness to the beginning of passive night vision. Technological improvements included vacuum tight fused fiber optics for good center resolution and

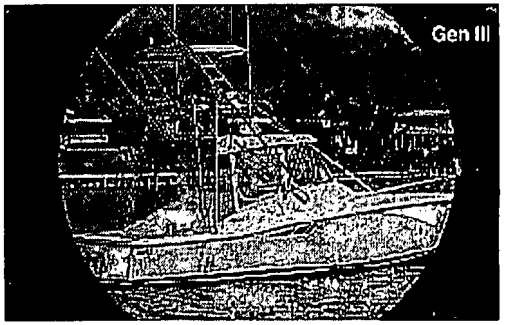
improved gain, multi-alkali photocathodes and fiber optic input & output windows. GEN I devices lacked the sensitivity and light amplification necessary to see below full moonlight, and were often staged or cascaded to improve gain. As a result, GEN I systems were large and cumbersome, less reliable, and relatively poor low light ima gers. They were also characterized by streaking and distortion.

Generation	II
Era	1970's
Amplification	20,000x
Operating Life	2,500-4,000 hours



The development of the Microchannel Plate (MCP) led to the birth of Generation II devices in the late 1960's and early 1970's. Higher electron gains were now possible through smaller packaging, and performance improvements made observation possible down to 1/4 moonlight. The first proximity focused microchannel plate (MCP) image intensifier tube was an 18mm used in the original AN/PVS-5 NVG. Generation II+ provides improved performance over standard Gen II by providing increased gain at high and low levels. Generation II+ equipment will provide the best image under full moonlight conditions and is recommended for urban environments.

Generation	II H.D.	III
Era	1998--	1990's
Amplification	25,000x	30,000 - 50,000x
Operating Life	10,000 hours	10,000 hours



Litton has introduced a new level of Image Intensifier Tube Performance, selection and diverse mission capability. Significant advances in tube reliability, photocathode sensitivity, signal to noise ratio, and most importantly, resolution, are now in both Generation II H.D. (High Definition) and Generation III Image Intensifier Tubes. A key element in this advanced performance is based on the increased light gathering capability of a new generation of micro-channel plates that feature much reduced pore size down to 6 microns. This micro-channel plate is now being used in the Generation II H.D. 18mm format image intensifier tubes, which offers a dramatic leap in resolution of more than 57Lp/mm, nearing the performance of Generation III technology, to include the life expectancy of the tube.

The current state-of-the-art, the Generation III intensifier multiplies the light gathering power of the eye or video receptor up to 50,000 times. Requiring over 460 manufacturing steps, the GEN III intensifier is typically characterized by a Gallium Arsenide

(GaSa) photocathode, which is grown using a metal organic vapor-phase epitaxy (MOVPE) process. The photon sensitivity of the GaAs phtocathode extends into the near-infrared region, where night sky illuminance and contrast ratios are highest. Sealed to an input window which minimizes veiling glare, the photocathode generates an electron current which is proximity focused onto a phosphor screen, where the electron energy is converted into green light which can then be relayed to the eye or sensor through an output window.

More to come on the newly developed Generation IV Unfilmed Image Intensifier Technology. Check with us for the latest information.